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ABSTRACT

This document presents a step-by-step method for evaluating collective tactical training exercises for maneuver-arms units. The guidance presented is generally applicable to formal (external) and informal (internal) evaluations. Both types of evaluations are treated as stemming from training exercises. That is, training is a major purpose of the exercise--it is not conducted only to evaluate the unit. This document contains guidance for evaluations conducted to provide units with diagnostic feedback on their performance and to provide higher echelons with information on the units' training needs and proficiency. Procedures are broken down into five stages, each of which is further divided into a series of steps. The first stage includes those planning and preparation steps which should be accomplished before the unit moves to the field for the exercise. The second stage includes final preparation steps which are carried out immediately before the start of the exercise. The third stage includes the operations carried out during the tactical exercise. The fourth stage consists of the steps to be accomplished in preparing and conducting after-action reviews. The fifth stage consists of those steps to be accomplished in preparing an after-action report or briefing. (Author/PN)

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Research Product 84-14

HOW TO EVALUATE UNIT PERFORMANCE

Presidio of Monterey Field Unit
Training Research Laboratory

July 1984

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This document presents a step-by-step method for evaluating collective tactical training exercises for maneuver-arms units. Procedures are broken down into five stages, each of which is further divided into a series of steps. The first two stages cover preparations for the evaluation exercise; the third stage covers the evaluation data collection; and the final two stages cover postexercise activities, including the preparation for and conduct of after-action reviews.

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HOW TO EVALUATE UNIT PERFORMANCE

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FOREWORD

The Presidio of Monterey Field Unit is recognized for its applied research in unit training and evaluation. Past research and development has emphasized test and evaluation of emerging training systems, training methodology for tactical engagement simulation, and innovative approaches to solving problems in training management.

Improving maneuver-arms tactical training is a high priority for the Army. ARI has developed strategies, techniques, and practical guidance in support of the Army Training and Evaluation Program (ARTEP). This research product, one of several recent efforts along this line, is designed to provide evaluation teams with step-by-step guidance on how to prepare for and conduct evaluations of maneuver-arms tactical field exercises.

EDGAR M. JOHNSON
Technical Director

HOW TO EVALUATE UNIT PERFORMANCE

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HOW TO EVALUATE UNIT PERFORMANCE

INTRODUCTION

The purpose of this document is to provide guidance on preparing and conducting evaluations of maneuver-arms unit performance.

The guidance presented below is generally applicable to formal (external) and informal (internal) evaluations. Both types of evaluations are treated as stemming from training exercises. That is, training is a major purpose of the exercise--it is not conducted only to evaluate the unit. Thus, note taking, debriefings, After Action Reviews, etc. are included as basic ingredients of evaluation procedures. This document contains guidance for evaluations conducted to (a) provide units with diagnostic feedback on their performance, and (b) to provide higher echelons with information on the units' training needs and proficiency.

This document has several other characteristics which will affect its use. First, it is expressly designed to provide guidance on evaluations based on unit tactical field exercises. Therefore, some of the guidance will not be needed for evaluating TWETs, CPXs, MAPEXs, etc. Second, some of the guidance is specific to tactical engagement simulation (MILES) exercises. For exercises which do not require an OPFOR and MILES (e.g., Tactical Road March), the material dealing with the MILES-related procedures can be ignored. Third, there are a variety of actions that indirectly support and affect the quality of training evaluations which will not be covered. Some examples are selection of suitable terrain, scenario development, establishment of appropriate force ratios and decisions concerning employment of OPFOR firepower. Finally, this guidance assumes that there is no shortage of required training resources, mainly because the types and extents of shortages vary considerably from one location to another. Thus, the guidance provided

here is for the "ideal case." Adjustments to fit local circumstances will probably be required.

There are two basic audiences for this document: those in charge of the evaluation and the evaluators. Most of the material presented is directed to the officer(s) responsible for preparing for and insuring the quality of the evaluation. Although the evaluation team members could profit from careful reading of the following material, their attention should be directed primarily to STAGE 3: "During the Exercise," and STAGE 4: "After Exercise."

Although limited information on exercise control requirements are covered in the document, detailed explanations are presented in FM 25-5, How to Plan, Prepare, and Conduct Tactical Training with MILES.

The evaluation guidance is broken into five stages (Figure 1) and each stage consists of a series of steps. The title of each stage indicates when the steps are to be carried out, and the title of each step indicates what is to be done. The first stage includes those planning and preparation steps which should be accomplished before the unit moves to the field for the exercise. The second stage includes final preparation steps which are carried out immediately before the start of the exercise. The third stage includes the operations carried out during the tactical exercise. The fourth stage consists of the steps to be accomplished in preparing and conducting after action reviews (AARs). The fifth and final stage consists of those steps to be accomplished in preparing an after action report or briefing.

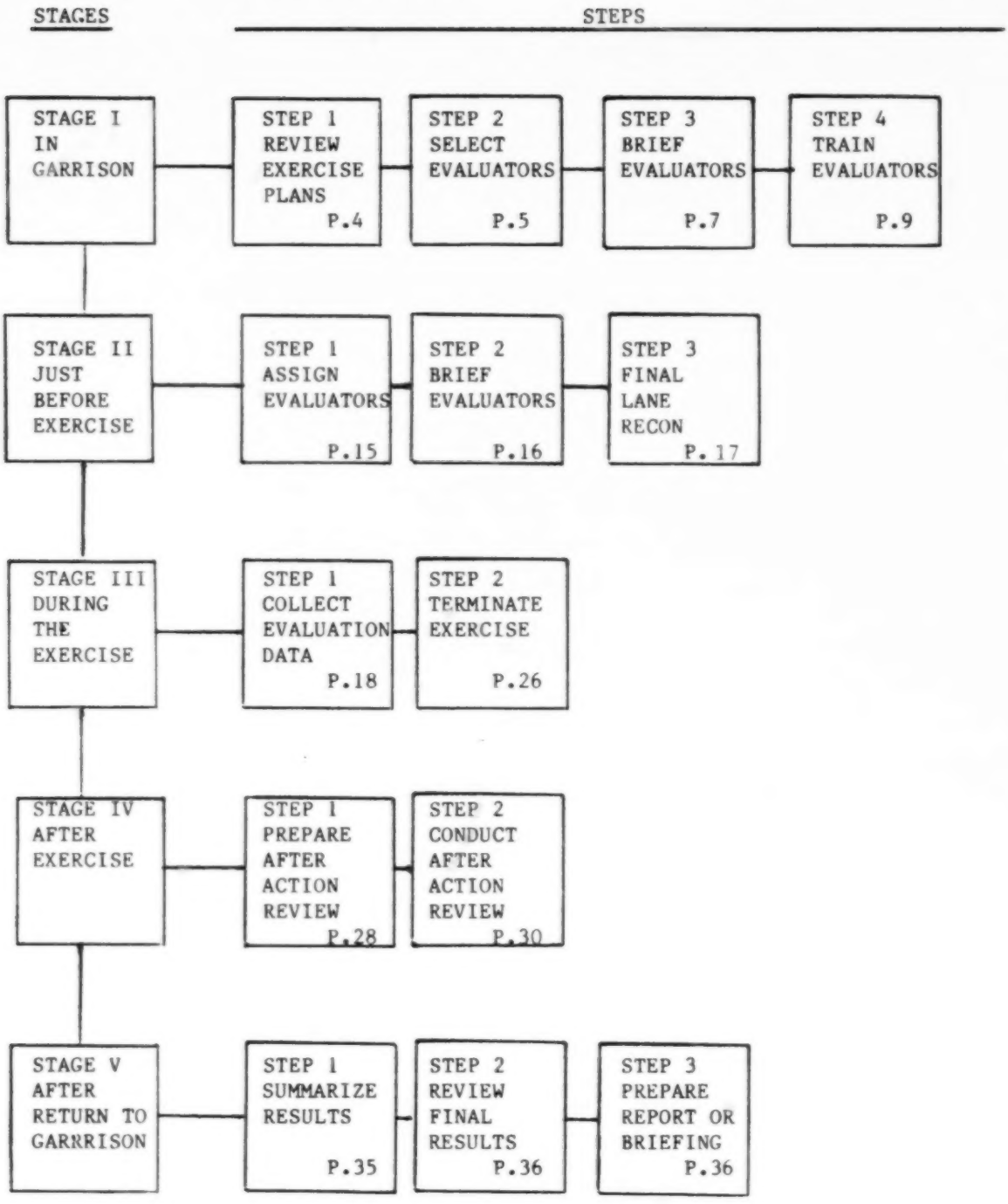
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Figure 1. Contents schematic.

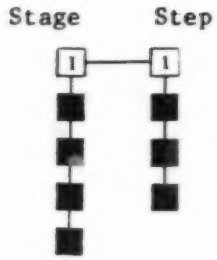
STAGE I. "In Garrison" consists of four steps:

STEP 1. Review Exercise Plans

STEP 2. Select Evaluators

STEP 3. Brief Evaluators

STEP 4. Train Evaluators



STEP 1. Review Exercise Plans

1. The evaluation team leader should be familiar with the purpose, scope and general requirements of the evaluation exercise before any other actions are begun. For formal (external) evaluations the necessary information will usually be contained in the tasking documents. For informal (internal) evaluations the necessary information may be developed in battalion staff meetings, by the battalion S-3, or by the company commander. Issues of concern in the initial review include:

   a. High priority training objectives.

   b. Tactical scenario and terrain.

   c. Time available for preparation.

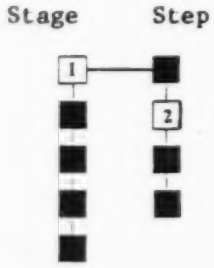
   d. Special equipment needed.

   e. Evaluation team manpower requirements.

   f. Coordination and administrative requirements.

2. Prepare an information package for the evaluation team members.

Include as many details of the evaluation operation as possible. An example of what such a package might contain is provided in Table 1 (page 8). To the extent that details are not known at this early stage, plan to acquire the information before the evaluation team briefing (STEP 3). For less structured evaluations, usually internal evaluations, information may be provided in the team briefing without written materials.



STEP 2. Select Evaluators

The quality of the evaluation is dependent on the experience and expertise of the evaluators. Every effort should be made to select the best quality personnel available to serve as evaluators. Some considerations are as follows:

1. RANK. The evaluators' ranks should be one higher than the highest rank in the echelon being evaluated. This structure tends to minimize disputes and to make operations smoother.

2. EVALUATION EXPERIENCE. Evaluators should be selected who have previously served as evaluators, and whose performance in that role has been found acceptable. This will tend to minimize (a) the amount of evaluator training required, (b) the amount of time required to prepare for the exercise, and (c) the amount of supervision needed during the evaluation process. If evaluators who have little or no previous experience must be

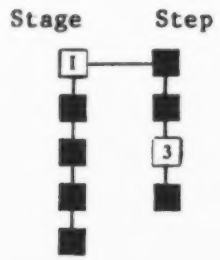
used, they should be paired with experienced evaluators during the evaluator training period. Experienced evaluators should be assigned partial responsibility for the training of their less experienced counterparts. Such pairing tends to reduce the amount of time and effort required for training and facilitates the hand-off of methods, techniques, and lessons learned by the experienced evaluators. Whenever possible inexperienced evaluators should accompany experienced evaluators during an exercise prior to assuming responsibility for evaluating a unit. Such "hands-on" evaluator training usually results in improved quality of the evaluation.

3. LEADER EXPERIENCE. Evaluators should be selected who are currently, or have recently been, leaders of the echelon they will be evaluating. Many training objectives require substantial leader experience to interpret and apply accurately. Using experienced leaders can also reduce the amount of training needed. Although it is extremely rare to have them available, leaders with combat experience should be assigned to key evaluator positions whenever possible.

4. TO&E. Evaluators should be selected who have had recent assignments in the type of TO&E unit to be evaluated and should have an OSC/MOS appropriate to the evaluated unit's TO&E.

5. NUMBER OF EVALUATORS. The number of evaluators required depends on the purpose of the evaluation. However, in general, enough evaluators should be selected to cover at least one and preferably two echelons below the one to be evaluated, plus at least one evaluator for the OPFOR, one for each specialized attached unit or section (e.g., FIST), and one senior evaluator. In addition a few alternates should be selected to cover for unexpected absences, or to serve as "trainee" evaluators to be used in future evaluations. Alternate evaluators can fill desirable functions which

are not strictly required (e.g., tactical radio net monitor).



STEP 3. Brief the Evaluators

1. Begin the briefing by handing out an evaluator information package. An example of the contents of such a package is provided in Table 1. Try to make the package as complete as possible and have its sections arranged in the order in which you intend to brief them.

2. PURPOSE AND SCOPE OF THE EVALUATION. Briefly explain why the evaluation exercise is being conducted and what the evaluation team will be expected to accomplish. Describe the unit(s) to be evaluated, and note any special characteristics which may affect the evaluation process (e.g., under strength).

3. OVERVIEW OF THE TACTICAL SCENARIO. Provide a brief description of the scenario and the key tasks and sub-tasks which are to be evaluated. Provide just enough detail to give the evaluators a concept of the operations. Do not overwhelm them with details. Details can better be presented during the evaluator training period (STEP 4).

4. OVERALL SCHEDULE OF EVENTS. This should include all major events from evaluator training through preparation of the after action report (if required). Although the schedule need not include precise dates and

times, it should indicate the sequence in which events are expected to occur. The objective here is to give the evaluators some idea of what is

Table 1

Example of Evaluator's Information Package Contents

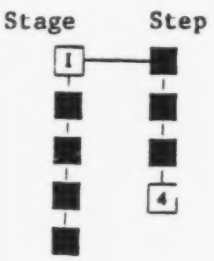
a. Statement of Purpose and Scope
b. Tactical Scenario Description (with maps and overlays, as required)
c. ARTEP Training and Evaluation Outlines, or Evaluator's Test Questions (Army Unit Tests)
d. Overall Schedule and Exercise Schedule
e. Evaluator Training Plans
f. Evaluator Training Support Materials
g. Control Plan (including Evaluation Team Organization)
h. Communication Plan
i. Administrative and Logistic Details
j. Safety Instructions
k. Transportation

supposed to happen. Naturally, if a reliable schedule has been developed in detail, it can be provided in the information package. The evaluators should be told to see the OIC/NCOIC at the end of the briefing if they have any conflicts with the schedule of events.

5. EVALUATOR TEAM TASK ORGANIZATION. The task organization is usually easiest to present as a block diagram. Often the organization can be shown as an overlay of the organization of the unit being evaluated, plus the OPFOR evaluator(s).

6. EVALUATOR TRAINING PLANS. Provide an overview of the training to be given to the evaluation team, including MILES controller training. Each topic to be covered during the evaluator training period should be introduced.

7. EVALUATION TEAM MATERIALS. Evaluation team members will need some special items. A brief list is provided in Table 2 (p. 10).



STEP 4. Train Evaluators

1. By the end of the evaluator training period evaluators should have thorough knowledge of the following:

a. Evaluation Performance Criteria.

b. Tactical Scenario and Terrain.

c. Exercise Control Plan.

Table 2

Example of Evaluators' Materials

1. Map
2. Compass (optional)
3. MILES Controller Gun, Controller Key and Controller Handbook
4. Distinctive Clothing (evaluators should be dressed so that they are easily distinguished from the players from a distance)
5. Clipboard and Pencils
6. Watch
7. Radio (for exercises at or above platoon level)
8. Binoculars (for exercises using large lanes)

d. Training Aids and Devices (e.g., MILES).

e. Administrative, Logistic and Safety Procedures.

f. How to lead an After Action Review (AAR).

2. There are a number of training methods which can be used to achieve these objectives. These include:

a. Class Instruction.

b. Evaluator Workbooks.

c. Observation and Discussion of Tactical Exercises.

d. Terrain Reconnaissance.

3. CLASS INSTRUCTION.

a. The class may be conducted in a classroom or in the field. If the evaluation team is able to go to the field for preliminary terrain reconnaissance the class should be held just prior to the reconnaissance.

The instructor should make the class as interactive as possible. That is, the instructor should guide the class by asking questions and having the class answer them. This approach tends to hold the attention of the class better than a lecture format.

The most important topics to be covered in the class are the T&EOs (or Evaluator Test Questions (ETQ) for Army Unit Tests) and the tactical scenario. As you present each part of the Tactical Scenario, discuss each task, subtask, condition, and standard. Ask the evaluators to define important tactical terms in order to insure that they are all working from the same definitions. Some evaluation standards are written to allow for flexibility in application. Terms like "immediate," "appropriate," etc. will require working definitions in order to help apply them in a consistent way. These should be supplied by the senior evaluator. Extensive group discussions

of these kinds of definitions should be avoided. Each evaluator should have a map of the exercise lane and a copy of the appropriate T&EO. They should follow along using both of these as the instructor discusses the exercise. The class should be led to visualize the exercise developing. For each T&EO standard ask the class: "How would you know if the unit were meeting the standard?" Ask the class to give examples. Have them specify observable behaviors which indicate success or failure on each standard or question. A number of problems commonly encountered in applying ARTEP T&EO standards are discussed in Stage III, Step 1 (p. 18). At a minimum these classes of problems should be covered with the evaluation team.

The main discussion will naturally focus on the unit to be evaluated. However, the OPFOR plans and role in the scenario also should be discussed in detail.

b. Discuss the Exercise Control Plan. The discussion should cover:

(1) Evaluation Team Chain of Command.

(2) Communications (Frequencies and Call Signs can be provided in handouts, though it is usually best to provide this information after going to the field (STAGE II).

(a) Tactical Nets (Unit and OPFOR).

(b) Evaluation and Control Net.

(c) Administrative Net.

(3) Control Measures (lane boundaries, checkpoints, phase lines, etc.).

(4) Responsibilities of each type of evaluator position.

(5) Rules of Engagement (this is especially critical in MILES exercises).

(6) Control Procedures.

c. Discuss Administrative, Logistic and Safety Procedures.

d. Determine how many and which evaluators have had MILES training. If most evaluators have had MILES training, pair those who have not with those that have. If this is not feasible, plan to allocate the non-MILES trained evaluators to the least critical positions.

If few evaluators have had MILES training, arrange for at least two days of training. If this is not feasible the evaluation will suffer. The quality of the evaluation is dependent on the quality of exercise control, which is in turn dependent on detailed knowledge of the capabilities and requirements specific to MILES exercises.

e. At the end of the class instruction you should have identified areas in which the evaluation team's knowledge needs to be improved. Assign the team some reading, if necessary, to correct the major shortfalls. But remember, do not overload the team with material. Be specific. Do not assign entire volumes but rather identify specific pages or sections. Plan to ask questions on the assigned material over the next day or so, and tell the evaluators that you intend to do so.

f. The class discussions will give you a reasonably good idea of their competency and may reveal some problems not previously recognized. Also, the evaluation team discussions may give you a good basis for assigning team members to positions for the exercise.

4. EVALUATOR WORKBOOKS. A self-paced evaluator workbook has been developed and is available in the ARTEP Mission Training Plan. The workbook can minimize the amount of time the evaluation team leader needs to spend training the evaluation team. The workbook covers the evaluators' duties from the planning stage through the After Action Review. The workbook should not

be used as the sole training method but rather should be used in conjunction with other methods described in this section.

5. OBSERVATION AND DISCUSSION OF TACTICAL EXERCISES. If possible, arrange for the evaluation team to observe tactical exercises of the type they will be evaluating. Follow the observation by a discussion of the T&EOs and tactical scenario. The team's discussion should focus on how to apply T&EO standards and techniques for observing exercises.

6. PRELIMINARY TERRAIN RECONNAISSANCE. Take the evaluation team to the site of the upcoming exercise. Walk or drive the lane(s) completely, and follow the tactical scenario and ARTEP T&EO through each stage of the evaluation. The evaluation team should be familiar with:

a. the probable routes of advance;

b. probable defensive positions (main, forward and secondary positions);

c. OPFOR and administrative control measures;

d. good sites for observing the exercise;

e. location of administrative HQ;

f. probable locations of the first, and major later engagements;

g. probable defensive "blind spots" or "dead zones";

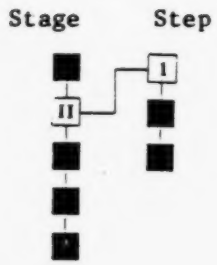
h. highly vulnerable parts of offensive movement routes.

STAGE II. "Just Before the Exercise" consists of three steps:

STEP 1. Assign Evaluators

STEP 2. Brief Evaluators

STEP 3. Final Lane Reconnaissance



STEP 1. Assign Evaluators

1. Assign the most experienced evaluators to cover the most difficult to evaluate elements in the exercise.

2. The senior evaluator should cover the leader of the evaluated unit.

3. At least one evaluator should observe the exercise from the OPFOR perspective.

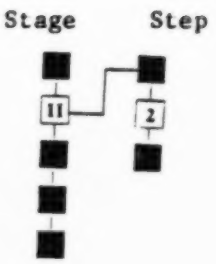
4. Each evaluator should know who is immediately above and below him in the evaluation team's chain of command.

5. If extra evaluators are available, assign one to listen exclusively to the tactical radio net and make notes on engagements (times, locations, etc.) SITREPs, and other potentially significant events.

6. Inexperienced evaluators should be paired with experienced ones whenever possible.

7. Evaluators who are least qualified can be assigned to pass out, collect, and account for data forms, evaluator team equipment, etc.

8. After evaluators have been assigned, pass out the evaluation forms (T&EOs or ETQs), and other required items.



STEP 2. Brief Evaluators

This is the last opportunity to brief the evaluators before the exercise begins. All final instructions to the team should be given.

1. Review the training objectives.

2. Review the rules of engagement.

3. Review Exercise Control Measures. Include the control measures for the tactical unit if known. Evaluators should enter control measures on their maps.

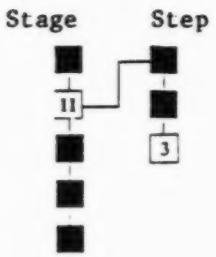
4. Provide list of call signs and frequencies.

   a. Exercise Control Net.

   b. Tactical Nets (Unit and OPFOR).

   c. Administrative Net.

5. Briefly review administrative, logistic and safety procedures and instructions.



STEP 3. Final Lane Reconnaissance

1. The evaluation team should already be familiar with the terrain from the preliminary reconnaissance (STAGE I, STEP 4). The final reconnaissance will focus on the OPFOR positions or routes. This will help the evaluation team to anticipate the evaluated unit's actions and responses to the OPFOR, and will improve the quality of the evaluation.

2. If the OPFOR is in the defense:

   a. Inspect the major weapon system positions.

   b. Inspect forward, main and secondary defensive positions.

   c. Have OPFOR leader brief the evaluation team on the defensive plan, including the fire support plan.

   d. Determine the OPFOR fields of observation and fire.

   e. Identify "dead zones" (places which cannot be covered by direct fire).

   f. Identify both best and probable routes into the OPFOR position(s).

   g. Inspect counter-mobility measures (minefields, obstacles, etc.)

3. If the OPFOR is in the offense:

   a. Inspect the route of advance from the point at which the unit is expected to detect the OPFOR approach.

b. Have the OPFOR leader brief the evaluation team on his plan of attack, including his fire support plan.

c. Identify probable locations of initial engagements.

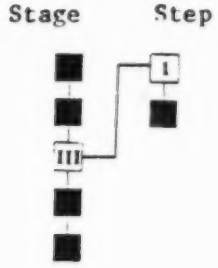
d. Identify locations along the planned OPFOR route at which they are particularly vulnerable to direct fire.

4. Finally, the evaluation team should carry out a communication check.

STAGE III. "During the Exercise" consists of two steps:

STEP 1. Collect Evaluation Data

STEP 2. Terminate Exercise



STEP 1. Collect Evaluation Data

1. During the exercise, the evaluation team will need to collect two types of data: a) notes on important exercise events based on the evaluation team's observations and b) responses to ARTEP T&EO standards (or for Army Unit Tests, Evaluator's Test Questions). Notes will be used after the exercise to clarify and to add detail to the data from T&EO standards. In the following, paragraphs 2 through 7 cover observation and note taking, and paragraphs 8 and 9 cover the application of T&EO standards.

2. Each evaluator should make notes on important events during the exercise. Make notes on the evaluation forms. Write down the time each important event occurs. Notes should include "what, when, to whom, and how" each event occurred.

3. Evaluators should pay close attention to the orders given by the unit leader. Make notes on key aspects of the order, and on significant omissions.

4. If unit is in the defense:

a. Inspect the positions.

b. Determine fields of observation and fire.

c. Identify "dead zones."

d. Identify probable OPFOR routes into the position.

e. Identify elements most likely to make initial contact, and select a position allowing good observation.

f. The evaluator with the OPFOR should inform the evaluation team when the OPFOR crosses their line of departure.

5. If the unit is on the offense:

a. Move with or near the unit.

b. Move so that you will be in a good position to observe initial contact.

c. If a unit splits up the senior evaluator should be informed immediately.

d. Usually, it is best to move with the forward-most elements of the unit. The next higher evaluator should try to insure that the rear elements are covered. This is especialy important when the lead unit splits up, or when elements of a unit are likely to come in contact with the OPFOR.

e. As your unit passes or crosses administrative or tactical

control measures, inform the next higher evaluator immediately.

6. Do not compromise locations, firing positions or movement routes of the unit or of the OPFOR. Remain tactical throughout the exercise.

7. Keep in contact with evaluators of adjacent units.

8. The basic idea of the T&EO is simple. The evaluator determines whether or not a unit met the performance standard for a given task, performed under certain conditions. On the evaluation form, the evaluator indicates whether standards were achieved, not achieved, or were not observed or evaluated.

9. However, there are some complications in applying performance standards. The following are commonly encountered problems and suggestions on what to do about them.

a. Some standards refer to actions which occur repetitively. This situation occurs very often. The evaluator's problem is how to evaluate the performance if sometimes the unit meets the standard and sometimes it doesn't.

EXAMPLES: "MOVEMENT IS CONTROLLED BY VISUAL SIGNALS WHEN OUT OF CONTACT" (ARTEP 71-2, 3-IV-6-6)

"THE MANEUVER ELEMENT BOUNDS TO THE SUBSEQUENT OVERWATCH POSITION EMPLOYING THE APPROPRIATE MOVEMENT TECHNIQUE INTERNALLY." (ARTEP 71-2, 3-IV-6)

Such actions are often appropriate many times or continuously during a single exercise; but the evaluator is to give a single response.

SUGGESTIONS: Use the 70 percent rule. That is, for any standard which is applicable continuously or several times during an exercise, if the unit performs the required action at least 70 percent of the time, indicate

that the standard has been met. To help you do this, keep a tally on your evaluation form of the number of "GO" and "NO GO" cases. Make notes on unusually important cases. For standards which are appropriate throughout the exercise look for the behavior every 5 to 10 minutes. Try to have at least ten observations by the end of the exercise.

b. Some standards refer to unit actions which may be required of more than one unspecified soldier or element. This situation is similar to the one discussed in paragraph "a." Here, however, the evaluator's problem is how to evaluate the performance if some of the relevant soldiers or elements perform the required actions while others do not.

EXAMPLES: "THE PLATOON OCCUPIES CONCEALED, HULL DOWN POSITIONS..." (ARTEP 71-2, 3-IV-1-10)

"THE PLATOON:...PERFORMS OPERATOR MAINTENANCE ON VEHICLES, WEAPONS AND OTHER EQUIPMENT." (ARTEP 71-2, 3-IV-8-11)

SUGGESTIONS: For standards that refer to actions required of all or most of a unit, use the 70% rule. That is, if at least 70 percent of the elements required to perform an action actually do so, the evaluator should indicate that the standard has been met. The evaluator should also make notes on elements who do not perform the action required.

Some standards appear similar in format to the examples shown above, but are actually standards for leader actions or for actions of one or two elements within a unit. If a leader action is satisfactorily completed, whether by the leader himself or by a unit member, the evaluator should indicate that the standard has been met. Similarly, if an action is required of only one or two elements within a unit, the standard should be treated in the same way. That is, if the required action is satisfactorily completed,

the evaluator should indicate that the standard has been met. Here again, the evaluator should make notes on unusual or extenuating circumstances.

In cases where failure to perform to standard by elements within a unit is exceptionally severe, the situation should be brought to the attention of the senior evaluator as soon as the exercise is completed.

c. Some standards refer to action sequences which begin with cues. The cues are often difficult for the evaluator to detect. These occur especially under tasks that are related to engagements.

EXAMPLE: "OVERWATCHING ELEMENTS INITIATE ENGAGEMENT WITHIN FIVE SECONDS AFTER TARGET APPEARANCE." (ARTEP 71-2, 3-IV-7-3) This standard requires the evaluator to detect the target the second its intervisible.

"(PLATOON) REQUESTS IMMEDIATE SUPPRESSION OF OPFOR POSITION." (ARTEP 71-2, 3-IV-2-6) This standard requires the evaluator to detect the OPFOR cue immediately, to be listening to the tactical net at the moment the request occurs, and to know the precise location of the OPFOR position.

SUGGESTIONS: If the evaluator misses the cue entirely, he should indicate "not observed." If the evaluator sees the cue late and the standard refers to a time interval, the evaluator should begin to time the event when he detects the cue. He should not try to guess when the cue first appeared and make judgement on that basis. Where terms are vague (e.g., "immediate"), the senior evaluator should supply the definition.

d. Some standards require the evaluator to know what is happening on both sides of the exercise. These are usually encountered in engagement-related tasks.

EXAMPLE: "THE ASSUALT SECTION COMMENCES THE ASSULT WHEN SUPPORTING AND DIRECT FIRES HAVE SUPPRESSED THE OPFOR POSITON." (ARTEP 71-2, 3-IV-2-8) This standard requires the evaluator to know when the OPFOR is suppressed.

SUGGESTIONS: Keep in close contact with OPFOR evaluator and the Fire Marker team, if one is used. When evaluating the effects of unit actions while using MILES, ask the evaluator with the OPFOR or Fire Marker team leader whether the OPFOR is receiving fires and what the effects are. For example, if suppressive direct fire is under way, the OPFOR should be receiving MILES "near-miss" indications whenever exposed. Also, make sure that the unit's weapons are pointed at the OPFOR, because another unit may be responsible for the suppressive or other effects reported by those near the OPFOR.

e. Some standards may not be appropriate under some conditions. The most frequently occuring reason is that the terrain may not permit the unit to execute certain actions. Other factors (e.g., weather) may also make some standards inappropriate.

EXAMPLES: "(THE PLATOON) REQUESTS SUPPRESSIVE FIRE AND SMOKE ON THE ATTACKING OPFOR." (ARTEP 71-2, 3-IV-3-9) High wind or wind blowing in the wrong direction may make the use of smoke inappropriate.

"THE LEAD SQUAD MOVES CONTINUOUSLY ON A COVERED, CONCEALED AXIS 100 TO 400 METERS FORWARD OF THE LEAD VEHICLE OF THE TRAIL ELEMENT." (ARTEP 71-2, 3-IV-6-8) Terrain usually does not permit this standard to be fully met. It is rare that a fully covered movement route is available.

SUGGESTION: If a standard cannot be met because of conditions over which the evaluated unit has little or no control, do not evaluate the unit on that standard. Indicate "not evaluated" on evaluation form and make a note of the reason. If a unit's action seems to be in violation of the principle underlying a standard, make a special note and review the circumstances with the senior evaluator after the exercise. For example, suppose the terrain did not permit a unit to move on a continuously covered, concealed route. But suppose also that the unit did not use the cover or concealment which was available. Even though the evaluator might indicate "not observed," he should also bring the performance to the attention of the senior evaluator. While uniform application of performance standards is important, the primary goal is to determine what the unit needs most to focus on in later training exercises.

f. Some standards refer to actions which are often not observable. These are most commonly found under tasks which deal with planning, and command and control, and often refer to the leaders thought processes.

EXAMPLES: "UNIT PERSONNEL PERFORM THE BACKWARD-PLANNING SEQUENCE..." (ARTEP 71-2, 3-I-1).

"COMMANDERS AND STAFF ANALYZE UNIT ACTIVITIES..." (ARTEP 71-2, 3-I-2).

"THE MANEUVER ELEMENT OCCUPIES THE SUBSEQUENT OVERWATCH POSITION AND CONDUCTS A RAPID VISUAL SEARCH OF THE POSITION AND ADJACENT TERRAIN." (ARTEP 71-2,3-V-3-10)

Because much of the activity referred to by such standards is not

necessarily visible, such standards tend to be difficult to apply. The evaluator should look for interactions among the unit members, and concrete products which indicate the required activity is taking place. For example, if a standard requires analysis of unit activities, indicators might include conversations among key leaders or written notes. Unless there is some concrete, observable behavior which clearly indicates that the action referred to by the standard has been omitted or completed, the evaluator should indicate "not observed" on the evaluation form. The evaluator should not try to infer whether or not a standard is met based on other subsequent actions or outcomes.

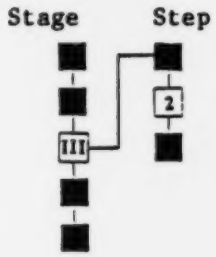
g. Some standards do not explicitly indicate what actions the evaluator is to look for.

EXAMPLES: "TARGETS ARE ENGAGED WITH THE MINIMUM WEAPONS NECESSARY TO INSURE DESTRUCTION." (ARTEP 71-2, 3-V-3-7).

"(THE PLATOON) SETS UP LOCAL SECURITY." (ARTEP 71-2, 3-IV-13-1)

"(THE SQUAD) ESTABLISHES AN OBSERVATION POST (OP) ON ORDER, TO PROVIDE EARLY WARNING OF OPFOR ACTIVITY IN THE AREA." (ARTEP 71-2, 3-III-3-2)

SUGGESTION: These types of standards depend heavily on the evaluator's tactical knowledge and should be thoroughly covered during the evaluator training. The evaluation team leader should give the evaluators several specific examples of both adequate and inadequate unit actions. Examples should be given in terms of the tactical scenario to be used in the exercise. If evaluators have difficulty in applying standards during an exercise, the problems should be discussed with the senior evaluator after the exercise.



STEP 2. Terminate Exercise

1. It is sometimes appropriate to terminate an exercise before it is completed. The decision for early termination depends on the evaluation goals and on the attrition in the unit and OPFOR.

a. In internal evaluations the exercise can be terminated when either of the forces is not making any significant progress or when either of the forces has sustained enough casualties to make further progress unlikely. It is not effective training to have units fight to the last man. Generally, if a unit has in excess of 30 percent casualties, it will have an extremely difficult time completing its mission. More importantly, little will be gained by prolonging the evaluation when a high proportion of the players are casualties: there will be a few soldiers left in the exercise who can be evaluated.

b. In external evaluations the above considerations apply. However, in some cases there may be a requirement to complete the evaluation. If the unit has sustained a high percentage of casualties early in the exercise, it may be advisable to (a) halt the exercise, (b) withdraw the OPFOR and reset the MILES devices, (c) allow the unit to bring its casualties forward and reorganize, and then (d) to restart the exercise. A typical case which calls for this procedure is when the unit is required to conduct an attack and then to consolidate and reorganize. If the unit

sustains heavy casualties before seizing their objective, there is likely to be an inadequate basis for a meaningful evaluation of the unit's capability to carry out consolidation and reorganization tasks.

2. When the exercise is terminated, evaluators should collect data on the exercise outcome which may have a bearing on later interpretations. These data can include:

a. Number and types of casualties on each side.

b. Rounds expended (from MILES equipped tanks, TOWs and DRAGONs).

c. Type of weapon inflicting kills (MILES equipped tanks, APCs and TOWs).

d. Final disposition of forces.

e. Unusual conditions or events (e.g., weather; elements firing after exercise was terminated).

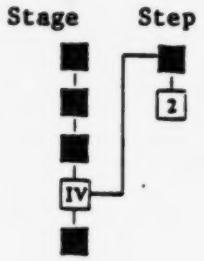
f. Tactical vehicles not operational (mechanical).

3. Most of the evaluation items should have been completed during the exercise. However, some may have to wait until the exercise is terminated. There are two types of such items: (a) those which refer to actions which should occur repetitively or continuously throughout the exercise, and (b) those about which the evaluator was uncertain of how to score the unit. Items about which the evaluator is uncertain should be discussed with the senior evaluator before scoring them. If an After Action Review is to be held, these items can be discussed in the controller debrief (STAGE IV, STEP 1.)

STAGE IV. "After Exercise" includes two steps:

STEP 1. Prepare the After Action Review

STEP 2. Conduct After Action Review



STEP 1. Prepare the After Action Review

1. Select site and assemble participants. After the exercise, a site needs to be selected for the AAR. If possible, the AAR should be held where the majority of action occurred, where the most critical events took place, or where this terrain can be observed. Most often the OPFOR objective or the unit objective will be suitable for assembling the players and conducting the AAR.

2. Debrief Controller. After the exercise, and the necessary troop leading procedures, the evaluator/AAR leader should review his knowledge about the critical events and determine the nature of major information gaps. The evaluator/AAR leader must have a complete understanding of what happened in the exercise, from the unit entering its initial positions through termination of the exercise. Obtain a detailed description of the exercise's major tactical events in the order in which they occurred. Descriptions should emerge from the debriefing of the subordinate unit evaluators and the OPFOR evaluator(s). All evaluators should be encouraged to contribute their observations regarding the elements for which they were responsible. The following examples of topics about which the evaluator should have relatively detailed information may be helpful.

a. Important aspects of mission planning and preparation.

b. Disposition of forces.

c. FRAGOs involving major changes on plans.

d. Deviations from planned routes and/or actions.

e. Major engagements and their results.

f. Coordination and communications.

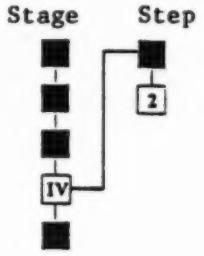
3. After the evaluator has a good understanding of what happened during the exercise, he should review the critical events and rank them in terms of their relevance to the exercise training objectives and their contribution to the exercise outcome. He should then select as many critical events as can be covered in detail during the time allowed for the AAR and place them in chronological order. Writing key words on the T&EO or ETQ form may help the evaluator to guide the AAR and keep the discussion focused.

4. Select teaching points to be made in AAR. Teaching points should focus on critical events that occurred during the exercise. A critical tactical event is often related to a major loss or gain that impairs or enhances a unit's ability to perform. In MILES exercises, critical events are usually associated, one way or another, with casualties inflicted or sustained. After the AAR leader has filled in any gaps in his knowledge of the exercise, he matches teaching points to be made with the sequence of critical tactical events. Tactical events can provide teaching points "of opportunity" and these may be included if important. However, discussions unrelated to important teaching points should be avoided. At this point, the AAR leader should have a list of key words as reminders of teaching points critical tactical events. This includes the following for each event.

- What Happened - description of the critical event.
- How it Happened - key facts surrounding the critical event.
- Why it Happened - inferences about probable causes.

- Alternative Courses of Action - how could the unit have done better.

5. Evaluation data forms should be collected from subordinate unit evaluators, and briefly reviewed for completeness. If evaluators have kept their notes on something other than the evaluation forms, they should also be collected and attached to the appropriate form.



STEP 2. Conduct the After Action Review

1. Organize the participants. When the evaluator/AAR leader assembles the participants for the AAR he should organize them according to their organization in the exercise. Each subordinate element controller should be with the unit for which he was responsible. All players should be present for squad and platoon AARs. In a company-level AAR not all players should be present. The company AAR is directed toward the leaders. In an armor company, players from the tank commanders up should be present. For an infantry company, players from the squad leaders up should be present. Other key players should be present as needed. For example, the FIST leader should be present if friendly indirect fire was included in the exercise. The remaining troops should be released back to their vehicles for maintenance, preparation for the next exercise, etc. Figure 2. shows the physical layout for an infantry company AAR.

2. Begin the AAR by asking the unit leader to make a brief statement of the training objective. These should be described as specifically as possible. The AAR leader should also state any additional teaching points that he intends to cover during the AAR. The number of these should be limited to three or four key ones to keep the AAR focused and prevent it from becoming excessively long.

3. Next guide a discussion of the major tactical events, in their order of occurrence. Diagrams should be employed to help players visualize the exercise development. Start by sketching the main terrain features and, as the AAR proceeds, have the participants draw in routes of advance, objectives, locations of engagements, etc. A general scenario for a company-level AAR is shown in Table 3. Squad and platoon AARs follow the same general sequence, though the focus will be more on execution than on command and control issues at the lower echelons.

4. Each major event should be discussed in detail to make teaching points about the unit's performance during the event. The AAR leader does the following in an effective AAR:

a. Avoids giving a critique or a lecture.

b. Guides the discussion by asking leading questions.

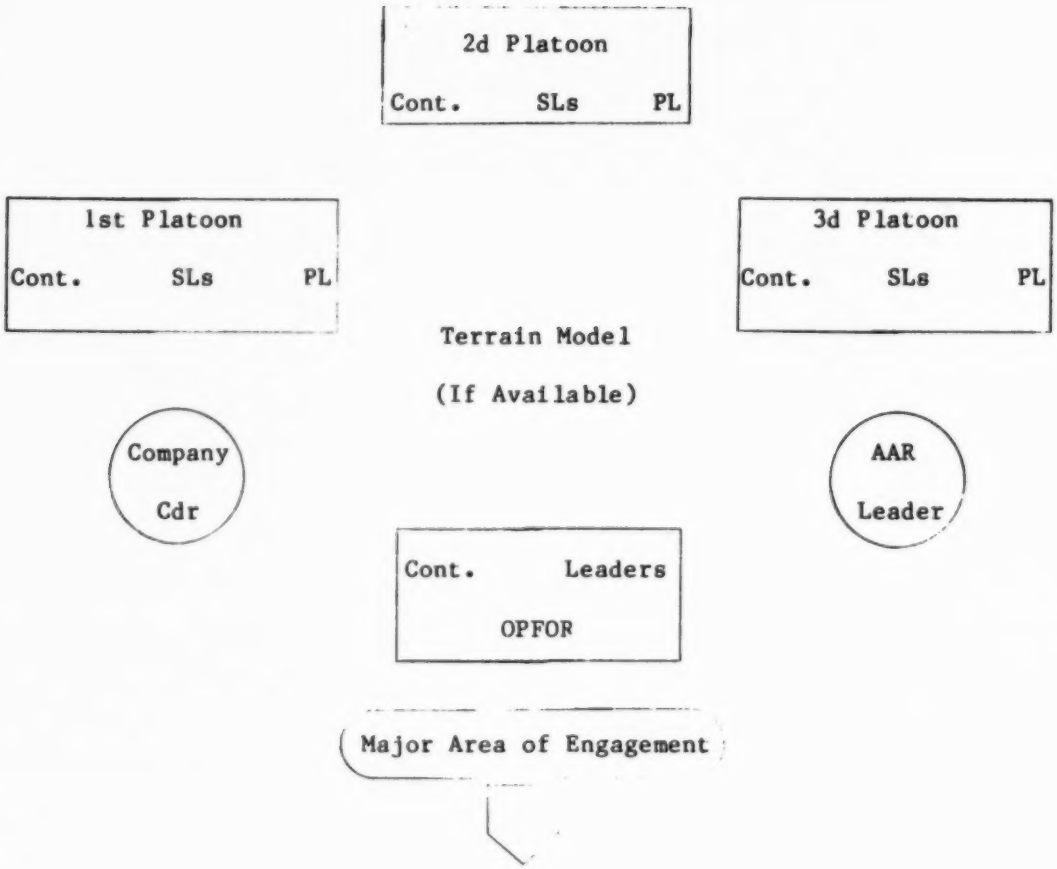
c. Has players describe what happened in their own terms.

d. Has players discuss not only what happened but how it happened, why it happened, and how it could have been done better.

e. Focuses the discussion so that important tactical lessons are made explicit.

f. Relates tactical events to subsequent results.

g. Avoids detailed examination of events not directly related to major training objectives.



(SL = Squad Leader, PL = Platoon Leader, Cont. = Controller)

Figure 2. Arrangement for infantry company after action review (AAR).

Table 3

General Scenario for A Company AAR

Event	Responsibility
State Training Objectives or Teaching Points	Company Commander and AAR Leader
OPFOR Plan	OPFOR Leader
Company's Plan	Company Commander
Events before Detection/ Contact	Company Commander/Platoon Leaders
First Detection/Contact	Participants
Frag Orders	Company Commander
Events During Engagement	All Participants
Final Results	All Participants
Summary	AAR Leader

h. Encourages the participants to use diagrams to illustrate teaching points and to show routes, phase lines, objectives, etc.

i. Does not allow players to offer self-serving excuses for inappropriate tactical actions.

5. The AAR leader briefly summarizes teaching points in terms of the training objectives covered in the AAR. After the summary, the AAR leader can have a private conversation with the unit leader regarding his strengths and weaknesses and what he can do to further improve his performance, and that of his unit. Whenever possible, an opportunity should be provided for the

unit leader to discuss the points raised in the AAR, as well as his own observations, with the members of his unit.

6. Characteristics of a good AAR:

a. Order and discipline are maintained.

b. Training objectives are reviewed.

c. The AAR leader guides unit's discussion to the important events, reasons why these occurred, and how the unit could have done better. Avoids detailed examination of events not directly related to training objectives.

d. The AAR leader traces chains of events so that the results of mistakes are understood by participants (one mistake is often a partial cause of another).

e. Attention of the participants is held and they are involved in the discussion.

f. The summary and new training objectives are clear and concise.

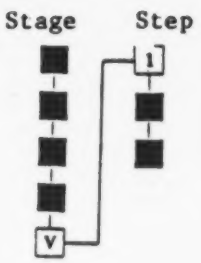
g. Sketches or diagrams are used to reinforce points made in the AAR.

STAGE V. "After Return to Garrison" consists of three steps:

STEP 1. Summarize Results

STEP 2. Review Final Results

STEP 3. Prepare Report or Briefing



STEP 1. Summarize Results

1. Organize the results by units one echelon below the unit evaluated.

2. Review the results for completeness.

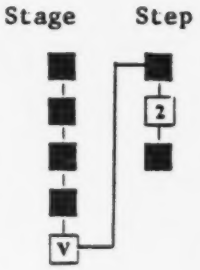
3. Identify results which seem unusual, or which suggest some evaluation problem. For example, if a platoon was evaluated and two squads did very well, but one squad had serious problems, carefully review the third squad's results, and determine the evaluator's level of experience or other possible extenuating circumstances.

4. Summarize the results for sub-echelon by evaluation standard. Calculate the number or percentage of positive, negative and "not evaluated" responses for each standard, for each task, and for each major subordinate echelon.

5. Identify tasks or groups of standards which seemed to give the unit the most difficulty. Also note tasks on which the unit did particularly well.

6. Review evaluators' notes. Review notes concerning the unit's problem areas and try to determine the reasons for their problems. If a problem seems to be caused by a scenario, terrain, evaluator, or equipment difficulties, make comments to that effect in your summary.

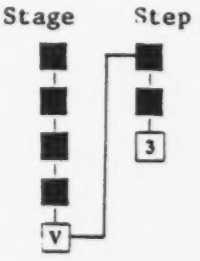
7. Make a list of the unit's strong points and one of their weak points.



STEP 2. Review Final Results

1. Review the evaluation forms and notes with the evaluation team, standard by standard. Separate unit performance problems from those caused by other factors (scenario, exercise control, terrain, evaluators, training devices or unit equipment).

2. Review your lists of strong and weak points with the team, and make changes as appropriate.



STEP 3. Prepare Report or Briefing

1. Results should be interpreted in a way which helps unit leaders to conduct further training. Naturally, remedial training should be centered

on the unit's weak points. Therefore, the unit's problems should be explained most thoroughly.

2. Information from evaluations can be broken into three categories:

a. Information from unit performance on T&EO tasks (including notes and comments).

b. Mission Accomplishment.

c. Casualties inflicted and sustained.

3. Normally, these three types of information will be consistent with one another. Only rarely should one find any major differences which have not been resolved in an earlier step. When inconsistencies do occur, they are most often caused by problems outside the unit being evaluated. Some common sources of inconsistent results are discussed below.

a. The tactical scenario can be too difficult. This usually results in a very poor casualty exchange ratio and mission failure. If the unit is well trained, the evaluator may notice that even though the unit had a poor casualty exchange ratio and failed to accomplish its mission, the unit satisfactorily completed most of the T&EO tasks. Other factors which may suggest an overly difficult tactical scenario include extremely long or short exercises. In the former case, a unit may become pinned down with little or no opportunity to maneuver without sustaining heavy casualties, thus prolonging the exercise. Very short exercises can occur when, for example, the OPFOR is able to bring heavy, sustained fire against the unit early in the exercise, the terrain does not provide cover and the scenario does not provide the unit with access to supporting fire.

b. The tactical scenario can be too easy. This usually results in an exceptionally good casualty-exchange ratio, mission

accomplishment and very short exercises. If the unit is less than "well trained" these results will be inconsistent with performance on T&EO tasks.

c. Factors which are usually responsible for the scenario being too difficult or easy are the terrain, the force ratios, the distances between the unit and OPFOR, and inclusion of too many tasks or events. Also, repeated OPFOR experience on the same terrain can cause unfavorable casualty exchange ratios and/or mission failure and appears as an inconsistency when few performance problems are found on T&EO tasks.

d. Problems with MILES equipment usually results in low numbers of casualties on both sides of the engagement. Another typical symptom of MILES equipment problems is the unit and OPFOR getting "tangled-up" at the end of an exercise without substantial casualties. Performance data from T&EO tasks may not bear any consistent relation to casualty and mission accomplishment data in such cases.

e. Problems with unit equipment (especially tactical vehicles) often results in a poor casualty exchange ratio and/or mission failure. Here again, T&EO task data may not bear any consistent relation to casualties or mission accomplishment.

f. Leader performance problems, especially inappropriate decisions can often result in a poor casualty exchange ratio and/or mission failure, sometimes with few indications of performance problems on T&EOs. These indications, however, are usually concentrated in the standards related to command and control.

4. Prepare Report or Briefing. Most units will have a format SOP for preparation of After Action Reports. However, the report or briefing contents should cover the following:

a. Outline of Scenario.

b. Outcome of Exercise.

c. Major areas in need of further training.

d. Recommended training strategy.

e. Problems encountered during evaluation (lessons learned).

APPENDIX A

AFTER ACTION REVIEW - BACKGROUND AND TECHNIQUES

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AFTER ACTION REVIEW - BACKGROUND AND TECHNIQUES

The procedures for preparing and conducting After Action Reviews (AAR) were presented in STAGE IV of the preceding section. This section provides a rationale for AARs and some general style and technique considerations. This material can be used by evaluation team members who desire either a broader perspective on performance feedback or a rationale for the procedures given in STAGE IV.

BACKGROUND AND RATIONALE

After a tactical training exercise, feedback should be provided to units in order to increase and reinforce learning. In the past, feedback has been given during a critique in which the senior evaluator presents his analysis of the unit's performance and indicates what the unit did well and what they did poorly. In a good critique, the evaluator also indicates training strategies for correcting the unit's major problems. Before the development of tactical engagement simulation training methods (e.g., MILES), the critique was the principal method for informing units about their levels of proficiency. In times past, the critique was an adequate solution to the feedback problem because the scarcity of objective performance data made extensive interpretation of tactical events necessary.

Tactical engagement simulation training systems began to be developed during the early 1970s. These methods, characterized by reasonably accurate weapon effects simulations, provided the opportunity to replace the critique with a more effective teaching technique. In order to distinguish it from the lecture-format critique, the new feedback method was called the After Action Review (AAR). The following comparisons explain the nature of the AAR by contrasting it with the familiar critique.

The AAR Increase Soldier Participation. In a critique, commanders and soldiers are basically an audience; in an AAR, they are participants. This difference dramatically increases teaching effectiveness for three reasons. First, active participation in a learning activity (as opposed to passive observation) greatly increases the amount of information learned and retained. Second, in a discussion, topics are often approached from several points-of-view, thus increasing the chance that participants will gain greater insight into the topic at hand. In contrast, only one point-of-view is presented in a critique--that of the lecturer--and the chances that a large proportion of the audience will benefit are substantially less. Finally, direct participation increases motivation by providing a sense of involvement in the learning process. Such involvement frequently reduces a soldier's resistance to acknowledging his own mistakes, thereby further increasing learning and retention of tactical skills.

The AAR is Broad in Scope. In a critique, the leader is limited by the type and amount of information he and perhaps a few others have gathered. In contrast, because all key players participate in an AAR, each is a source of information. Thus, the AAR inherently provides a much richer "data base" from which teaching points can be drawn. This is especially critical at command levels because much important information is essentially private. For

example, the commander's assessment of the situation and the reasons for his tactical decisions are available only to him. In a critique, this kind of information is most often not taken into account. In the AAR, however, such information is an important part of the discussion and forms the context for discussing alternative courses of action.

The AAR Structure is Easy to Follow. The AAR is structured around sequential exercise events. This helps: (a) examination of chains of events, (b) determination of how and why specific actions were undertaken, (c) active discussion of alternatives, and (d) examination of how certain events determined or influenced subsequent outcomes. The exercise event-oriented AAR structure is based on the recognition that unit leaders and soldiers need to learn that: (a) no matter what the situation may be, alternative courses of action exist, and (b) leaders and soldiers should select from among these alternatives after evaluating what the probable consequences of each would be. This is distinctly different from a critique in which "failures" are often pointed out, but actions that influenced or determined failure are rarely explored in detail. In a critique the actions needed to avoid "failure" are frequently not clear to unit leaders or soldiers.

Because the specific topics discussed within the context of a particular scenario are directly determined by a unit's tactical behavior, the AAR is a highly flexible teaching vehicle. A wide variety of tactical actions and training objectives can be explored and evaluated depending upon the unit's particular training needs. The AAR struture provides a sequential, easy to follow framework and helps soldiers to explore important training issues.

The AAR Increases the Accuracy of Interpretation. Points made during a critique will often be based solely on the analysis of the leader conducting it. His analysis will often be based on limited information on the local

tactical situation, guesses regarding the unit's intention, and limited knowledge regarding information available to the element or leader at the time of the action or decision. In an AAR, these limitations are overcome through direct player participation. Important players are asked about what they knew at specific points in the exercise, their situation assessments, why certain tactical decisions were made, and so on. These kinds of questions and answers lead to more accurate interpretation of exercise events, better training diagnosis and more fruitful discussions of alternative courses of action. (A detailed example is given in Table A-1 p. 47).

The AAR Avoids Negativism. In contrast to the lecture format of a critique, the AAR leader guides the discussion by asking leading questions. Except for making periodic summaries, the AAR leader rarely makes a declarative statement. Key information is brought out by questioning as many of the relevant soldiers and leaders (on both sides) as needed to make a point. Once a critical action (or decision) is identified, further questions explore why the action was taken, its consequences, and what alternative existed. This questioning technique involves participants in the examination of the problem and avoids difficulties of resentment and resistance usually generated by direct criticism. By asking questions rather than lecturing, the AAR leader sets the tone of the AAR as a group problem solving session among fellow professional soldiers. Even though the AAR leader knows the unit's mistakes, he guides the participants to identify errors themselves and to seek solutions. Because the information comes from within the group, hostility and defensiveness often directed towards the critique leader are minimized. In the critique, the central theme is "What you did wrong." In the AAR, the key thrust is "How can we do better?" The latter orientation is by far the most preferable. By involving appropriate commanders, leaders, and troops in a

professional discussion of "How can we do better?", the cohesiveness of the unit and the chain of command are simultaneously reinforced.

AAR TECHNIQUE AND STYLE

Tactical Engagement Simulation training often fosters high degree of enthusiasm among the troops. In most ways the enthusiasm is good, but it can make it difficult to lead a good AAR. A reasonable amount of order and discipline must be maintained. The following suggestions may be helpful.

1. Encourage the troops to talk among themselves during the Controller/Evaluator Debriefing. It may help to eliminate some of the chatter later.
2. Inform the troops that the basic AAR rules are that:
   a. Only one person talks at a time;
   b. Only the individual designated by the AAR leader talks;
   c. Soldiers who want to make comments should raise their hands and wait to be called upon;
   d. Keep on track. Comments will only be accepted on the topic being discussed.

The point was made earlier that one avoids lecturing in an AAR and instead asks leading questions. The questioning technique avoids the problems of resentment and resistance, fosters positive motivation, and allows in-depth exploration of training objective-related issues. The AAR leader's questions are most often those to which he already knows the answer. Asking questions is simply a device for drawing those answers from the group. That way, information and comments come directly from participants rather than being criticism from the AAR leader.

In a sequence of questions on a given point, the first few questions are intended to help the group identify an important event or problem. The next

questions serve to elaborate and clarify the circumstances and causes of the event. Final questions help the group explore alternative courses of the event. Clearly, this technique requires considerable skill (not to mention restraint) on the part of the leader. The AAR leader should almost always know the answer to the question he is asking. Indeed, if he does not have a fairly accurate idea of what the answer to his question should be, the chances are good that he does not have a clear idea of a teaching point.

The following example illustrates the application of the AAR questioning technique (Table A-1). In this example the trainer is leading a platoon AAR and has covered key events up to initial contact. Suppose the AAR leader was aware that one of the platoon's squads had tried to engage OPFOR vehicles with VIPERS beyond their maximum effective range. This is how the AAR leader might guide the discussion of the teaching point.

Table A-1

Sample of AAR Questioning Technique

Comments	AAR Dialogue
AAR leader starts to identify "what happened."	AAR LEADER: WHAT WAS THE FIRST THING YOU SAW?
	1ST SQUAD LEADER: WELL SIR, WE SAW ONE OF THE BMPS COME OUT OF THE WOODLINE. I COULD SEE MY DRAGON GUNNER WAS ABOUT TO FIRE HIM UP WHEN, ALL OF A SUDDEN, A SECOND BMP CAME OUT RIGHT ON THE FIRST ONE'S TAIL.
AAR leader asks for more detail.	AAR LEADER: THEN WHAT HAPPENED?
Participant relates his plan.	1ST SQUAD LEADER: WELL, I FIGURED THAT IF WE GOT THE TRAIL BMP FIRST WE'D TRAP THE LEAD BMP BECAUSE HE WOULDN'T HAVE ROOM TO BACK UP. THEY WERE OUT OF RANGE FOR EVERYTHING EXCEPT THE DRAGON AND THE 60.
AAR leader begins to isolate error.	AAR LEADER: GOOD THINKING, BUT WHAT HAPPENED?
Participant has identified a probable error.	1ST SQUAD LEADER: WELL SIR, TWO VIPER GUNNERS GOT NERVOUS AND FIGURED THEY COULDN'T PASS UP SUCH A GOOD TARGET.
AAR leader enlarges scope of discussion by involving key participants in the discussion.	AAR LEADER: OK, HOLD ON A MINUTE--VIPER GUNNERS, WHERE ARE YOU?--WHAT HAPPENED?
	1ST VIPER GUNNER: WE FIRED BUT DIDN'T GET ANY HITS.

Table A-1 (continued)

Comments	AAR Dialogue
AAR leader attempts to have participant diagnose the error. This is "Why it happened?"	AAR LEADER: DO YOU KNOW WHY?
Participant diagnoses error.	1ST VIPER GUNNER: WELL SIR--THEY WERE OUT OF RANGE. AFTER EVERYTHING WAS ALL OVER, WE LOOKED AT A MAP AND THEY WERE AT LEAST 400 METERS AWAY. I GUESS WE JUST GOT EXCITED SEEING THOSE TRACKS.
AAR leader tries to get participant to identify another error.	AAR LEADER: WHAT ELSE DID YOU LEARN?
	2D VIPER GUNNER: WELL SIR, AFTER THE SQUAD LEADER GAVE US A COUNSELING SESSION WE FOUND OUT WE WEREN'T SUPPOSED TO FIRE 'TILL HE TOLD US TO. HE SURE MADE THAT CLEAR.
AAR leader starts to explore alternatives.	AAR LEADER: SQUAD LEADER, HOW COULD YOU HAVE CONTROLLED THEIR FIRES?
Participant gives one alternative.	1ST SQUAD LEADER: HOW 'BOUT HAND OR ARM SIGNALS SIR?
AAR leader presses group for another alternative. Fosters group problem solving.	AAR LEADER: YEAH, THAT'S ONE WAY, CAN YOU THINK OF ANOTHER?
	1ST SQUAD LEADER: AH--NOT RIGHT NOW SIR.

Table A-1 (continued)

Comments	AAR Dialogue
AAR leader involves more participants. Participant notes another alternative. "How can we do it better?"	AAR LEADER: ANYBODY ELSE GOT ANY IDEAS? SOLDIER FROM 2D SQUAD: SIR--HOW ABOUT FIGURING OUT WHERE THE MAX RANGE IS AHEAD OF TIME AND SAYING ANYTHING CLOSER THAN THAT SHOULD BE FIRED UP. AAR LEADER: DO I HEAR YOU SAYING YOU WOULD MAKE RANGE CARDS? SOLDIER FROM 2D SQUAD: YES SIR.
AAR leader has the squad leader summarize the discussion and restate the teaching points.	AAR LEADER: OK SQUAD LEADER, CAN YOU TELL US WHAT WE LEARNED ABOUT FIRE CONTROL? SQUAD LEADER: YES SIR. FIRE DISCIPLINE IS VERY IMPORTANT AND YOU DON'T WANT TO GIVE AWAY YOUR POSITIONS BECAUSE OF A SIGNATURE IF YOU CAN'T GET A KILL. I'VE GOTTA MAKE SURE THAT MY SQUAD HAS A FIRE CONTROL SOP AND THAT EVERYONE UNDERSTANDS THE PROCEDURES.

The questioning technique in the example is equally applicable at squad, platoon, company and battalion levels. The AAR leader first has participants define the situation, then identify its causes, and finally explore how performance could have been improved.

The timing of the AAR is important. The AAR should be conducted as soon as possible after the exercise. If delayed, controllers, leaders and troops will tend to forget the details of engagements, critical events, FRAGOs, spatial relationships, etc. The more time and events between the end of the exercise and the AAR, the more will be forgotten, and the less useful the AAR will be. An AAR can be delayed a few hours if necessary with little adverse effect; but if delayed a day or more, the AAR may be of little value. By that time many details will have been forgotten or confused with other events. The trainer should conduct the AAR while the exercise is still fresh in everyone's minds. Another situation which should be avoided is to conduct two (or more) exercises followed by comprehensive AAR. Experience has shown clearly, that events in the two exercises tend to become confused, making the AAR both difficult to organize and conduct, and not very beneficial. The two principles of AAR timing are: (a) conduct the AAR as soon as possible after the exercise, and (b) conduct an AAR for each exercise separately.

Visual aids should be used in the AAR. They help everyone to picture the terrain and tactical situation, and they increase learning. The kinds of aids that are desirable depend on the echelon, and on the location of the AAR. In most cases, AARs should be conducted where all participants have a view of the terrain on which most of the action occurred. Usually, the defensive position or objective provides a good location, especially if the route of advance of the attacking unit can be seen.

Squad and platoon AARs are most often held in the field. At the most simple level, the AAR leader can sketch the necessary information on the ground, using sticks and stones to indicate weapon systems, units, objectives and so on. This is particularly good for squad exercises and may be improved upon by using miniature weapon system models available in many toy and variety stores. Another alternative is to use a tripod- mounted briefing chart and felt pens. This has the advantage of being more visible to the participants than is the "ground sketch."

For company and higher level AARs conducted in the field, the briefing chart approach is probably best. Also, the terrain can be sketched on target cloth prior to the exercise, and later natural objects can be used to indicate vehicles, objectives, etc. If it is absolutely necessary, AARs can be conducted in garrison. Some posts have scaled terrain models of training areas often equipped with various weapons system models. These are generally excellent for AARs. Another alternative is a standard classroom or meeting room which usually come equipped with backboards.

Finally, the soldiers and other AAR participants should be asked to indicate their positions or routes, rather than having it done by the AAR leader. This increases the sense of participation and eliminates possible misinterpretation of the soldiers' comments.

APPENDIX B

PERFORMANCE EVALUATION AND TRAINING DIAGNOSIS

APPENDIX B

PERFORMANCE EVALUATION AND TRAINING DIAGNOSIS

This appendix presents some concepts underlying unit performance evaluation, and general method for identifying performance problems. It is hoped that by presenting concepts and methods together, a more complete picture can be drawn of the relationship between evaluation strategy and the development of unit proficiency than was possible in the procedural sections of this document.

EVALUATION

There are a wide variety of possible reasons for evaluating unit performance. Evaluations may be conducted to assess the training components of force readiness, to estimate the impact of major command and local policies, to identify requirements for training methods or devices, to identify needs for improved training doctrine, to assist in training program development, and to identify immediate unit training needs. Regardless of whether we are concerned with broad policy issues or with local training needs, answers to two fundamental questions are required: what is the current status? what is the best course of action?

The answer to the first question is a direct result of evaluation. Evaluations yield descriptive information about characteristics and qualities of whatever is being evaluated. Finding answers to the second question, "what

is the best course of action?" is a more complicated matter. Information about current status has to be combined with information about goals, costs, estimates of potential benefits, priorities, possible undesirable side-effects, etc. It is largely because of these situation-specific complications that most evaluation guidance tends to treat assessment of current status in more depth than issues related to future courses of action. While the principal thrust here has been on the evaluation processes supporting current status assessments, there has also been some emphasis on training diagnosis which provides a bridge between the description of unit performance characteristics and the determination of options for further training.

Training diagnosis denotes the process of taking descriptive "current status" information and making inferences about the causes of the actions or results described. That is, training diagnosis is finding out why things happen. To use a medical analogy, a patient sees a doctor and describes his condition. The doctor may also perform some laboratory tests. These provide the doctor with information on the patient's current status. The physician uses this information to determine the causes of the patient's condition. His determination is the diagnosis. The diagnosis together with other information about the patient (past history, sensitivity to particular drugs etc.) is then used to prescribe a treatment. It is common in this context for patients with identical diagnoses to receive different treatments. The same general model can be used to describe the evaluation process. The evaluation team produces descriptive information about the unit's performance. The evaluator uses that information to determine the reasons for actions and results described. The unit commander then uses that diagnosis along with other information about the unit, resources available, etc. to formulate a remedy for the unit's performance problems. This is the basic evaluation model: description forms

the basis for diagnosis and diagnosis is a key ingredient for determining the needs for further training.

In the preceding sections of the document the primary focus was on the procedures for producing accurate descriptions of performance. Though not stated explicitly, the descriptive information consists of two basic types: information about unit processes and information about outcomes. By far the most frequently encountered type is process information. Outcome information, like casualties, mission accomplishment, etc., is largely excluded from the ARTEP T&EOs, and similar training documents. There are two principal reasons for this exclusion. First outcome information is more easily contaminated by factors unrelated to the unit's performance. Characteristics of the OPFOR, environmental factors, terrain, force ratios, etc. may determine outcome as much as the proficiency of the unit. A second more important reason is that outcome measures, by themselves, give few clues about causes. A unit may not accomplish its mission or the exercise may result in a poor casualty exchange ratio, but that information is inadequate for training diagnosis and development of subsequent training plans. There are, however, uses for outcome information. They can serve as flags which signal probable performance problems and cue the evaluator to examine certain aspects of the exercise more closely. Outcome information, when used in conjunction with process information, can suggest how serious performance problems may be, and may therefore be useful in setting future training priorities.

ARTEP T&EO standards consist almost totally of process measures. The performance standards are based on those unit actions which are believed to result in the best possible chance of success on the battlefield. Moreover, process measures provide the best basis for diagnosing training deficiencies and have the advantage of being relatively independent of OPFOR actions and

other variables which often affect outcome measures. The major problem associated with these measures is their number. Because the T&EOs have been designed to pinpoint very specific problems in highly complex, variable situations, there are usually an awkwardly large number of standards within an evaluation exercise. By using outcome information (primarily casualty data) to flag potential unit performance problems, the difficulties of dealing with large numbers of process-oriented standards can be much alleviated. The following section deals with a general method for training diagnosis and suggests how process and outcome information can be used to identify performance problems.

TRAINING DIAGNOSIS

Training diagnosis is an art--there are no absolute rules to guide the evaluator. Yet, there are some general principles that can help the evaluator structure his inquiry into the "whys" of tactical performance. The evaluator is a detective and a large part of his activity is concerned with finding out why important events occurred. The first requirement is to sort out what is important from what is not. Unfortunately, much of what is important only becomes apparent long after the events have occurred. For that reason, the evaluator needs to become an expert at tracing chains of events back to their sources. One event will cause another which will in turn cause another and so on. Frequently, several such chains of events come together to influence the outcome at some critical point in the exercise. Being able to trace these kinds of chains of events is a key to the art of diagnosis.

The evaluator's detective work can be broken down into several sequential steps: the evaluator first determines what happened, then how it happened, and finally why it happened. Also, the evaluator should make assessments of the unit's tactical options; that is, what could have been done differently to improve the outcome of the event or exercise.

These assessments are usually made during the course of the MILES controller/evaluator debriefing held just before the After Action Review. During the controller/evaluator debriefing the evaluator receives information from his subordinate team members. Clearly the higher the echelon being trained, the more the evaluator will have to depend on other controllers for reliable information on the exercise, and for evaluations of subordinate unit performance. Also, other factors such as type of unit being trained, terrain, mission, etc. will affect level of detail covered in controller debriefing. For example, in a dismounted rifle squad hasty attack, an evaluator can often see and hear most of the action in the exercise. Therefore, the controller debriefing can be rather short, primarily focusing on filling in and confirming details. In contrast, consider a full, combined arms, company-team delay mission. The size of the unit, the amount of terrain involved, the complexity of the required maneuvers, etc. will combine to make an extensive, detailed controller debriefing necessary. Usually, the senior evaluator will only be able to observe a part of the action. Other evaluators (and often key OPFOR participants) must supply the information necessary to determine the reasons why key events occurred. It cannot be emphasized too strongly: the purpose of the MILES controller/evaluator debriefing is to provide the senior evaluator (AAR leader) with accurate, detailed information on not only what happened but also how and why events occurred, and most importantly on what could have done differently to improve outcomes. Each step of the training diagnosis process is discussed in the following paragraphs.

What Happened. The evaluator's first job is to select an important event for analysis. Important events in MILES exercises are most often associated in one way or another with casualties; the more casualties a unit inflicts or sustains, the more important that event is likely to be. The importance of

casualty-related events depends on the echelon in question. For a platoon, the loss of an APC is likely to be important. But, at the company level, such a loss is likely to be of lesser importance.

There are three major reasons why casualty events are likely to be good starting points for the evalutor's detective work. First, they are often the end of a series of actions that were unusually well or unusually poorly done. Second, casualties inflicted or sustained often have a bearing on mission outcome because they alter the relative firepower available to the two forces. Finally, casualties are clearly understood common denominators of warfare. Every commander or leader wishes to maximize casualties inflicted while minimizing those sustained. This orientation will provide a basis for discussion and understanding during the After Action Review.

Naturally, other types of events may be selected as important even though they may not result in casualties inflicted or sustained. A unit may, for example, be responsible for a major security breach which goes undetected or is not taken advantage of by the enemy. Another example would be a unit's failure to provide good indirect fire support for its subordinate elements, but, because of an outstanding performance by its smaller units, the unit may achieve an overwhelming victory. There are a great many events that do not result in casualties but are nonetheless important. On the whole, however, the evaluator will find that casualty-related events generally provide the best ground for meaningful diagnosis.

Having selected an important event, the evaluator's next job is to define the event's characteristics. The evaluator should seek information on the identities of the element(s) involved, and the time and location of the event. Most of this is relatively simple for casualty-related events. The relevant information is usually available from element's controller/evaluator

or from opposing force (OPFOR). Evaluators should be encouraged strongly to make written notes during the exercise, as this will greatly help in reconstructing the sequence of important events during the controller debriefing.

How it Happened. It is during this step that the evaluator's true detective work begins. Having determined what happened, the evaluator now tries to increase his understanding by gathering facts about actions preceding and following the event. He must develop a relatively complete understanding of both the event in question as well as closely related actions and events. For a casualty event, the evaluator would try to find out what the casualties (i.e., targets) were doing just prior to being engaged, what adjacent elements were doing, how the targets were acquired, etc. Most of this kind of information will have to be obtained from the other evaluators and from the OPFOR.

The key to this step is the evaluator's ability to ask the right questions. At the lower echelons, the right questions are most frequently related to what a given unit did, that is, to execution. But at higher echelons, important questions are more often related to what command elements knew about the situation and what decisions they made. For example, suppose that a lead company is moving forward when it is engaged by the OPFOR who pins down two of the company's platoons. Suppose also that the third platoon was not close enough to the OPFOR to deliver effective fire. At the lower echelon (platoon), the evaluator will be primarily interested in questions related to platoon fire and maneuver: How did the engagement begin? What were the platoons' reactions to receipt of fire? Did platoon leaders report the engagement? Was the available cover used effectively? Did platoons return OPFOR fire as effectively as possible? Etc. Data from ARTEP T&EOs can often be used to answer many such questions.

At the company level, the evaluator would need to ask different types of questions: Did the commander realize that two of his platoons had become heavily engaged? Did he have accurate information on all platoon locations? Did he attempt to get information on OPFOR locations and strength? What decision did he make about moving the third platoon into a position where it could provide support to the two which were pinned down? Did he request indirect fire support? Etc.

In summary, the how-it-happened step is geared toward gathering as many facts as possible about important exercise events. Exactly what facts should be gathered depends on echelon, mission, scenario, disposition of forces, friendly and enemy situations, etc. As noted earlier, many of the important facts will not be obvious: very careful debriefing of the evaluators and sometimes of the OPFOR will be necessary to get the needed information.

Why it Happened: This is the final and perhaps most difficult step of the diagnostic process. Here the evaluator's job is to organize the facts he has gathered and make inferences about the causes of the events in question. He must bring his tactical expertise, analytic ability, and frequently a considerable amount of intuition to bear on the problem of finding the fundamental causes of events he has chosen to analyze.

The evaluator first needs to organize the facts related to the event of interest. Key words and phrases indicating relevant actions and events should be listed in their order of occurrence. It is also useful to indicate the approximate time of the event. Most often, some of these events will be prior to the one of interest while others will occur later. Next, prioritize the events which occurred before the one in question in terms of how much each

preceeding event contributed to causing the latter one. This process will help to identify the immediate causes. However, more depth will usually be required to determine the more basic causes. Therefore the evaluator should take the one or two highest priority immediate causes and repeat the prioritization process in order to identify secondary or earlier causal events. A simplified diagram of this process is shown in figure B-1.

Figure B-1: Determining a Causal Chain of Events

The procedure should be repeated until the evaluator is confident he has found the basic causes of the critical event. Occasionally the immediate cause will also be the basic cause of a critical event. But frequently the basic cause will be two or three times removed from the critical event. There are a couple of guidelines which can help the evaluator estimate when his analysis has reached back far enough to reveal the "basic" cause of a chain of events. First, the next level of causal events will usually be difficult to prioritize. When several proceeding events seem to have similar effects in causing the next event, the event is probably a "basic" one. Second, "basic" causal events will often reveal a commonly encountered performance problem. For companies and larger units these problems will frequently be related to information transfer and decision processes. For smaller units most problems will concern execution.

Finally, once the basic causes are isolated, it will be necessary to determine how best to eliminate the problem. Some problems can be remedied by

using good After Action Review techniques followed by additional exercises. In this case, the evaluator should pay particular attention to problems discovered in the course of earlier exercises. Other types of problems may require different approaches both because of teaching effectiveness considerations and because of resource constraints. For example, often command and control can be better improved using TEWTS, CPXs, etc. than by using full-unit MILES exercises. It should be remembered that even the best training diagnosis is not worthwhile unless sound remedies for the problems uncovered are used.